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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/559,361	12/06/2005	Abraham Jan De Bart	NL 030638	5640

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EXAMINER	
BURD, KEVIN MICHAEL	
ART UNIT	PAPER NUMBER
2611	

NOTIFICATION DATE	DELIVERY MODE
01/02/2009	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ip.department.us@nxp.com

Office Action Summary	Application No.	Applicant(s)	
	10/559,361	DE BART ET AL.	
	Examiner	Art Unit	
	Kevin M. Burd	2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 February 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *06 February 2006* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Drawings

2. The drawings are objected to because the unlabeled rectangular boxes shown in the drawings (specifically figures 3 and 4) should be provided with descriptive text labels. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

3. Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-4 and 6-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ro et al (US 7,283,498) in view of Shirakata et al (US 6,618,352).

Regarding claims 1, 7, 9 and 10, Ro discloses an OFDM communication system (abstract). The system comprises a receiver as shown in figure 6. Pilot signals from each sub-channel are input to a BER measurer 602 to determine the quality of each of the sub-channels. The BER values are compared 604 and the number of pilot carriers to be allocated to a sub-channel is determined by comparing the BER of the sub-channel estimated using its pilot carriers in a base station (column 3, line 57 to column

4, line 7). If the BER of the pilot carriers for sub-channel 3 is less than a threshold, the number of pilot carriers is decreased (column 4, lines 22-33). Therefore, the quality of the pilot carriers is determined and when that quality is above or below a threshold, the allocation of the pilots is changed. Carriers with acceptable quality will be unchanged and carriers with unacceptable quality will be reduced or eliminated (column 4, lines 22-33). The data carrier and pilot carrier configuration is shown in figure 3. Ro does not disclose a correction unit for supplying a corrected signal comprising information on the data being corrected for a common amplitude error and/or a common phase error. Shirakata discloses an OFDM transmission system that corrects for phase error on each of the sub-carriers so the symbols can be demodulated even if a frequency error and a timing error are occurring between the transmitter and receiver (abstract). Column 15, lines 33-42 discloses a data carrier phase correcting unit directly corrects the data carriers on the basis of the phase error signal. It would have been obvious for one of ordinary skill in the art at the time of the invention to incorporate the data carrier phase correcting unit of Shirakata into the system of Ro to allow the data to be received properly and allow the demodulation process to operate quickly and more efficiently.

Regarding claims 2, 3 and 6, Shirakata discloses the phase error is determined by calculating the phase difference and determining the average value to more accurately determine the amount of phase change (column 17, lines 25-33).

Regarding claim 4, OFDM systems comprise an FFT. Ro discloses the FFT in column 3, lines 57-65 and Shirakata discloses the FFT in figure 14.

Regarding claim 8, Ro discloses a method of using an OFDM communication system (abstract). The system comprises a receiver as shown in figure 6. Pilot signals from each sub-channel are input to a BER measurer 602 to determine the quality of each of the sub-channels. The BER values are compared 604 and the number of pilot carriers to be allocated to a sub-channel is determined by comparing the BER of the sub-channel estimated using tits pilot carriers in a base station (column 3, line 57 to column 4, line 7). If the BER of the pilot carriers for sub-channel 3 is less than a threshold, the number of pilot carriers is decreased (column 4, lines 22-33). Therefore, the quality of the pilot carriers is determined and when that quality is above or below a threshold, the allocation of the pilots is changed. Carriers with acceptable quality will be unchanged and carriers with unacceptable quality will be reduced or eliminated (column 4, lines 22-33). The data carrier and pilot carrier configuration is shown in figure 3. Ro does not disclose a correction unit for supplying a corrected signal comprising information on the data being corrected for a common amplitude error and/or a common phase error. Shirakata discloses an OFDM transmission system that corrects for phase error on each of the sub-carriers so the symbols can be demodulated even if a frequency error and a timing error are occurring between the transmitter and receiver (abstract). Column 15, lines 33-42 discloses a data carrier phase correcting unit directly corrects the data carriers on the basis of the phase error signal. It would have been obvious for one of ordinary skill in the art at the time of the invention to incorporate the data carrier phase correcting unit of Shirakata into the method of Ro to allow the data to

be received properly and allow the demodulation process to operate quicker and more efficiently.

5. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ro et al (US 7,283,498) in view of Shirakata et al (US 6,618,352) further in view of Cho et al (US 2002/0004920).

Regarding claim 5, the combination of Ro and Shirakata disclose the receiver as described above. The combination does not disclose comparing the amplitude of the pilot carriers with a reference amplitude to determine the BER. The combination does not disclose the specifics for determining the BER. Cho discloses an apparatus for determining the BER in an OFDM communication system (abstract). A receiver includes a pilot pattern detector for OFDM demodulating a data symbol received in a frame unit and detecting only a pilot pattern and a BER operator for comparing the demodulated pilot pattern with a second reference pilot pattern, detecting and accumulating the number of pilot errors and measuring a bit error rate by dividing the accumulated number of the pilot errors by the number of total received pilot patterns (paragraph 0011). It would have been obvious for one of ordinary skill in the art at the time of the invention to incorporate the BER determination unit of Cho into the receiver of the combination of Ro and Shirakata. Using a well known method for determining the bit error rate would ensure an accurate and methodical approach to determining the BER and would ensure the proper carriers were allocated.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin M. Burd whose telephone number is (571) 272-3008. The examiner can normally be reached on Monday - Friday 9 am - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David C. Payne can be reached on (571) 272-3024. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Kevin M. Burd/
Primary Examiner, Art Unit 2611
12/29/2008